



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,573	10/13/2004	Gunnar Klinghult	55574-00006USPX	4509
23932 7590 04/23/2007 JENKENS & GILCHRIST, PC 1445 ROSS AVENUE SUITE 3200 DALLAS, TX 75202			EXAMINER MOON, SEOKYUN	
			ART UNIT 2629	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/23/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/511,573	Applicant(s) KLINGHULT, GUNNAR	
	Examiner Seokyun Moon	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-10,12 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-10,12 and 14-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The Applicants' arguments with respect to claim 1-2, 4, 6-10, 12, and 14-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 18 and 19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **claim 18**, the phrase "may be" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

As best understood by Examiner, the claim will be interpreted as "-- a display for showing menus in which navigation is performed by means of the input device" for further examination purpose.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art

Art Unit: 2629

are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 2, 6-10, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan et al. (GB 2,279,750, herein after "Ryan") in view of Rapaich (WO 00/20959).

As to **claim 1**, Ryan teaches a means ("*detecting means*") for enabling actuation of a device [pg 1 lines 12-23] comprising:

an activity sensor [fig. 8] [pg. 2 line 21] for sensing activation of the device [pg 7 lines 13-15];

wherein the activity sensor comprises a detector device (a combination of "*electrodes 80 and 81*", "*resonant circuit*" including "*capacitor 82*" and "*inductor 83*", "*capacitor 84*", "*oscillator 85*", "*discriminator 86*", and "*filter 90*") [fig. 8] for sensing a capacitance change at the device [pg 7 lines 13-15];

wherein the activity sensor further comprises a threshold comparator ("*threshold circuit 91*") [fig. 8] connected to receive an output of the detector device [pg 7 lines 12-13]; and

wherein the activity sensor is adapted to enable energization of the device [pg 11 claim 19] when the sensed activation of the device exceeds a threshold [pg. 7 lines 12-13], and the activity sensor further comprises a timer ("*timing device*") adapted to switch off the energization of the device (making the device to be in a dormant state) after a time has elapsed without any sensed activation of the pointing device [pg 7 line 35 – pg 8 line 8].

Ryan does not expressly teach the means being used for enabling actuation of a pointing device.

However, Rapaich [fig. 2] teaches an idea of using a means [fig. 4] comprising a capacitive activity sensor ("*touch sensor*") [abstract] being used for enabling actuation of a pointing device [fig. 2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the means of Ryan in the pointing device of Rapaich, as a means for enabling actuation of the pointing device of Rapaich, in order to provide a pointing device with low power consumption and low cost [Ryan: pg 1 lines 12-15].

As to **claim 2**, Ryan teaches the threshold being adjustable [pg 9 lines 4-7].

As to **claim 6**, Ryan [fig. 8] teaches the detector device comprising an oscillator ("*oscillator 85*") with a resonant circuit ("*resonant circuit*" including "*capacitor 82*" and "*inductor 83*").

As to **claim 7**, Ryan as modified by Rapaich teaches the capacitance of the pointing device (the formed capacitance between the "*electrode 80*" and "*electrode 81*" included in the pointing device) forming part of the resonant circuit [fig. 8].

As to **claim 8**, Ryan as modified by Rapaich teaches the activity sensor of the means comprising a detector device.

Ryan as modified by Rapaich does not expressly teach the detector device comprising a high impedance amplifier.

However, since the Applicants have failed to disclose that specifying the detector device to comprise a high impedance amplifier instead of an oscillator with a resonant circuit provides an advantage, is used for a particular purpose, or solves a state problem, it is an obvious matter of design choice to indicate the detector device to include a high impedance amplifier.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any one of a high impedance amplifier or an oscillator with a resonant circuit since any one of them would perform equally well at processing the detected capacitive change.

As to **claim 9**, all of the claim limitations have already been discussed with respect to the rejection of claim 1 except for an input device comprising the pointing device and the activity sensor.

Ryan as modified by Rapaich teaches an input device [Rapaich: abstract line 1] comprising the pointing device and the activity sensor [fig. 2].

As to **claim 10**, all of the claim limitations have already been discussed with respect to the rejection of claim 2.

As to **claim 17**, all of the claim limitations have already been discussed with respect to the rejection of claim 8.

6. **Claims 4 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan and Rapaich as applied to claims 1, 2, 6-10, and 17 above, and further in view of Casebolt et al. (US 6,661,410, herein after "Casebolt").

As to **claim 4**, Ryan as modified by Rapaich teaches a timer ("*timing device*") adapted to switch off the energization of the pointing device (making the device to be in a dormant state) after a time has elapsed.

Ryan as modified by Rapaich does not expressly disclose the time being adjustable.

However, Casebolt [col. 14 lines 25-35] teaches an activity sensor comprising a timer adapted to switch off the energization of a pointing device after a time has elapsed [col. 14 lines 49-51], wherein the time is adjustable [col. 14 lines 58-60 and col. 14 line 67- col. 15 line 2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the timer of Ryan as modified by Rapaich so that the time period of the timer required to switch off the energization of the pointing device is adjustable, as taught by Casebolt, in order to differentially control the supply of power for signal generation taking into account the relative power consumption rates [col. 14 lines 31-35].

As to **claim 12**, all of the claim limitations have already been discussed with respect to the rejection of claim 4.

7. **Claims 14-16 and 20-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan and Rapaich as applied to claims 1, 2, 6-10, and 17 above, and further in view of Shaw et al. (US 6,587,093, herein after "Shaw").

As to **claim 14**, Ryan as modified by Rapaich [Rapaich: fig. 2] teaches the pointing device comprising a ball (Rapaich: "52").

Ryan as modified by Rapaich does not teach the ball being capacitively connected to the detector device.

However, Shaw teaches a pointing device [abstract lines 9-12] comprising a ball ("710") [fig. 7] which is capacitively connected to a detector device ("*capacitance detector 700*") sensing a capacitance change at the pointing device [col. 7 lines 38-47].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ball of the pointing device of Ryan as modified by Rapaich to use capacitive sensing as a method for detecting the movement of the ball instead of using a conventional roller sensors, by replacing the ball of the device of the modified Ryan with the ball portion of Shaw and modifying the device of Ryan so that the activity sensor is used for detecting the movement of the ball portion, as taught by Shaw, in order to avoid direct electrical contact with the ball, and thus to reduce friction applied to the ball [col. 1 lines 16-18].

As to **claim 15**, Ryan as modified by Rapaich and Shaw [fig. 6] teaches the ball being a metallized ball with a dielectric material coating [col. 7 lines 1-3].

Ryan as modified by Rapaich and Shaw does not expressly teach the dielectric material being a plastic or rubber.

However, Examiner takes official notice that it is well known in the art to use a rubber or plastic as a dielectric coating material for a trackball included in an input device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify the dielectric material coating of the ball of Ryan as modified by Rapaich and Shaw being a rubber or plastic since both of the materials are well known for low production cost.

As to **claim 16**, Ryan as modified by Rapaich and Shaw teaches the detector device comprising an oscillator (Ryan: "*oscillator 85*") [Ryan: fig. 8] with a resonant circuit (Ryan: "*resonant circuit*" including "*capacitor 82*" and "*inductor 83*"), wherein a capacitance of the ball forms a part of the resonant circuit [Shaw: col. 7 lines 43-44].

As to **claim 20**, Ryan as modified by Rapaich teaches the pointing device including a user-manipulable member (Rapaich: "*ball 52*") [Rapaich: fig. 2], the activity sensor further comprises a resonant circuit (Ryan: "*resonant circuit*" including "*capacitor 82*" and "*inductor 83*") [Ryan: fig. 8], the resonant circuit having a frequency that changes when a finger of a user approaches or touches a second user-manipulable member (Rapaich: "*touch plate 60*") [Rapaich: fig. 2] by establishment of a capacitance [pg 7 lines 4-5], and the detector device (Ryan: a combination of "*electrodes 80 and 81*", "*resonant circuit*" including "*capacitor 82*" and "*inductor 83*", "*capacitor 84*", "*oscillator 85*", "*discriminator 86*", and "*filter 90*") [Ryan: fig. 8] detecting the capacitance change by detecting the change in frequency of the resonant circuit and an output of the threshold comparator activating movement sensing of the user-manipulable member [pg 7 lines 4-15].

Ryan as modified by Rapaich does not teach the user-manipulable member being capacitively coupled to the activity sensor.

However, Shaw teaches a pointing device [abstract lines 9-12] including a user-manipulable member ("*ball 602*") [fig. 6] having a conductive part ("*conductive surface*") covered by a non-conductive cover ("*dielectric outer layer 606*") [col. 6 line 64 – col. 7 line 3] and an activity sensor comprising a circuit which is capacitively coupled to the conductive part of the user-manipulable member by a member ("*plate 702*" and "*plate 704*") disposed with respect to the user-manipulable member, wherein the capacitance between the finger and the conductive part is changed when a finger of a user approaches or touches the user-manipulable member connected to a detector device ("*capacitance detector 700*") sensing a capacitance change at the pointing device [col. 7 lines 38-47].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ball of the pointing device of Ryan as modified by Rapaich to use capacitive sensing as a method for detecting the movement of the ball instead of using a conventional roller sensors, by replacing the ball of the device of the modified Ryan with the ball portion of Shaw and modifying the device of Ryan so that the activity sensor of the modified Ryan is used for detecting the movement of the ball portion, as taught by Shaw, in order to avoid direct electrical contact with the ball, and thus to reduce friction applied to the ball [col. 1 lines 16-18].

As to **claim 21**, Ryan as modified by Rapaich and Shaw teaches the user-manipulable member being a ball (Rapaich: "*ball 52*") [Rapaich: fig. 2].

As to **claim 22**, Ryan as modified by Rapaich and Shaw teaches the conductive part being a metallized layer that covers a core of the ball and the metallized layer being covered by the non-conductive cover (Shaw: "*dielectric outer layer 606*") [Shaw: col. 6 line 64 – col. 7 line 3].

As to **claim 23**, Ryan as modified by Rapaich and Shaw teaches the member disposed with respect to the user-manipulable member being an antenna or pick-up (Shaw: "*plate 702*")

Art Unit: 2629

and "plate 704", detecting the movement of the ball and producing electrical signals corresponding to the movement) [Shaw: col. 7 lines 38-47].

As to **claim 24**, Ryan as modified by Rapaich and Shaw [Shaw: fig. 7] teaches the member (Shaw: "plate 702" and "plate 704") disposed with respect to the user-manipulable member (Shaw: "ball 710") being spaced apart from the non-conductive cover.

8. **Claims 18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan and Rapaich as applied to claims 1, 2, 6-10, and 17 above, and further in view of Virkkunen et al. (EP 0,463,856, herein after "Virkkunen").

As to **claim 18**, Ryan as modified by Rapaich teaches an input device.

Ryan as modified by Rapaich does not the input device used to control a display.

However, Virkkunen teaches a mobile phone [fig. 2] utilizing a trackball input device ("W") as an inputting means and comprising a display ("D") for showing menus in which navigation is formed by means of the input device [abstract lines 1-2].

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the input device of Ryan as modified by Rapaich as an inputting means for a mobile phone, as taught by Virkkunen, in order to provide a pointing device with low power consumption and low cost [Ryan: pg 1 lines 12-15].

As to **claim 19**, Ryan as modified by Rapaich teaches the device being a mobile telephone [Virkkunen: fig. 2].

Conclusion

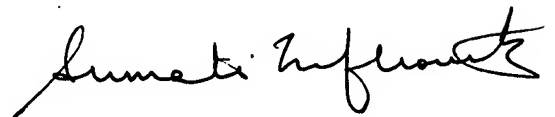
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (572) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

04/06/2007

- s.m.



SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER